

WHAT IS CLAIMED IS:

1. A method for use in a radio network including a radio network node coupled to a base station transmitting information over a radio interface on a common transport channel shared by plural mobile stations, a method comprising:

5 determining one or more conditions relating to a transmit power level for transmitting information over the radio interface to a mobile station using the common transport channel, and

regulating the transmit power level on the common transport channel based on the determined one or more conditions.

2. The method in claim 1, wherein the one or more conditions includes measurement information relating to a signal received by the mobile station.

3. The method in claim 2, wherein the measurement information includes received signal strength information.

4. The method in claim 2, wherein the measurement information includes received signal-to-interference information.

5. The method in claim 2, wherein the measurement information includes error rate information.

6. The method in claim 2, wherein the signal is on the common transport channel.

7. The method in claim 2, wherein the signal is on a downlink pilot channel.

8. The method in claim 1, wherein the one or more conditions includes information relating to a base station transmit power.

9. The method in claim 1, wherein the one or more conditions includes information relating to a service requested by the mobile station.

10. The method in claim 1, wherein the common transport channel is a forward access channel or a downlink shared channel.

11. The method in claim 1, wherein the common transport channel is a common packet channel or a high speed-downlink shared channel.

5 12. The method in claim 1, wherein the one or more conditions is analyzed in the radio network node.

13. The method in claim 1, wherein the radio network node uses power adjustment information to regulate the base station transmit power level on the common transport channel.

10 14. The method in claim 1, wherein the radio network node is a serving radio network controller which sends power adjustment information to a drift radio network controller which regulates the base station transmit power level on the common transport channel using the power adjustment information.

15 15. The method in claim 14, wherein the serving radio network controller determines an initial transmit power for the base station and sends that initial transmit power to the drift radio network controller.

16. The method in claim 14, wherein the drift radio network controller determines an initial transmit power for the base station.

20 17. The method in claim 14, wherein the serving radio network controller sends power adjustment information to the drift radio network controller as part of a data frame.

18. The method in claim 17, wherein the power adjustment information is sent a spare bits field of the data frame.

19. The method in claim 17, wherein the power adjustment information is sent as power offset information.

20. The method in claim 14, wherein the serving radio network controller sends power adjustment information to the drift radio network controller using a control signaling protocol.

21. The method in claim 1, wherein the regulating of the transmit power level is performed for the entire common transport channel.

22. The method in claim 1, wherein the regulating of the transmit power level is performed on the common transport channel on a per user connection basis.

23. The method in claim 1, wherein the regulating of the transmit power level is performed on a data block or time slot basis.

24. For use in a radio network including a radio network node coupled to a base station transmitting information over a radio interface on a common transport channel shared by plural mobile stations, the radio network node comprising:

a detector configured to detect one or more conditions relating to a transmit power level for transmitting information over the radio interface to a mobile station using the common transport channel, and

power control circuitry configured to determine power adjustment information for use in regulating a transmit power level on the common transport channel based on the detected one or more conditions.

25. The radio network node in claim 24, wherein the one or more conditions includes measurement information relating to a signal received by the mobile station.

26. The radio network node in claim 25, wherein the measurement information includes received signal strength information.

27. The radio network node in claim 25, wherein the measurement information includes received signal-to-interference information.

28. The radio network node in claim 25, wherein the measurement information includes error rate information.

30. The radio network node in claim 24, wherein the one or more conditions includes information relating to a service requested by the mobile station.

32. The radio network node in claim 24, wherein the common transport channel is a common packet channel or a high speed downlink shared channel.

33. The radio network node in claim 24, wherein the radio network node is a serving radio network controller.

34. The radio network node in claim 33, wherein the serving radio network controller uses power adjustment information to regulate the base station transmit power level.

35. The radio network node in claim 33, wherein the serving radio network controller sends power adjustment information to a drift radio network controller which regulates the transmit power level at the base station using the power adjustment information.

36. The radio network node in claim 35, wherein the serving radio network controller sends power adjustment information to the drift radio network controller as part of a data frame.

37. The radio network node in claim 33, wherein the serving radio network controller sends power adjustment information to the drift radio network controller using a control signaling protocol.

38. The method in claim 24, wherein the regulating of the transmit power level is performed for the entire common transport channel.

39. The method in claim 24, wherein the regulating of the transmit power level is performed on the common transport channel on a per user connection basis.

40. The method in claim 24, wherein the regulating of the transmit power level is performed on a data block or time slot basis.

5 41. A radio network comprising:
 a serving radio network controller (SRNC) , responsive to an external network, for initially establishing a connection over a radio interface with a mobile station via a first base station supervised by the serving radio network controller;
 a drift radio network controller (DRNC), coupled to the serving radio network controller, for supporting the connection from the serving radio network controller to the mobile station over a common transport radio channel after the connection is handed over to a second base station supervised by the drift radio network controller;
 the SRNC determining one or more conditions that affect transmission of information from the second base station to the mobile station over the common transport channel, to determine power adjustment information based on the determined one or more conditions, and to provide the power adjustment information to the DRNC, and
 the DRNC using the power adjustment information from the SRNC to regulate a transmit power level on the common transport channel.

20 42. The network in claim 41, wherein the one or more conditions includes measurement information relating to a signal received by the mobile station.

43. The network in claim 42, wherein the measurement information includes one of the following: received signal strength information, received signal-to-interference information, and error rate information.

25 44. The network in claim 41, wherein the serving radio network controller determines an initial transmit power for the second base station and sends that initial transmit power to the drift radio network controller.

5

10

15

52. The network in claim 41, wherein the DRNC regulates the transmit power level on a data block or time slot basis.